

Application No. 10/657,852

Response to Final Office Action mailed December 15, 2005

REMARKS

Favorable reconsideration of the subject patent application is respectfully requested in view of the above amendments and the following remarks. Following the amendments, claims 6-9, 26, 27, 29, 34 and 36-39 are under consideration.

Applicants wish to thank the Examiner for his helpful telephone discussions with the applicants' representative on December 22, 2005.

Previously withdrawn claims 1-5, 18, 19, 24, 30, 32 and 33 have been cancelled. Claim 9 has been amended to state that there is no sequence variation in conserved domains of the recited polypeptides. It is urged that support for this amendment can be found in Figure 3, in the brief description of Figure 3 (page 8, lines 12-19) and on page 23, lines 20-30 of the specification as originally filed.

Applicants submit that support for all the above amendments may be found throughout the specification as originally filed and that none of the amendments constitute new matter.

Claim Rejections under 35 U.S.C. §112, first paragraph - written description

Claims 9, 26, 27, 29 and 34 stand finally rejected under 35 USC §112, first paragraph, as lacking an adequate written description. This rejection is respectfully traversed.

Following the amendments, claim 9 is drawn to polypeptides comprising a sequence at least 90%, 95% or 98% identity to SEQ ID NO: 15, and that have an ability to bind ice crystals wherein there is no sequence variation in the conserved domains.

The variant sequences recited in amended claim 9 are clearly defined by **both** a statement of function (namely an ability to bind ice crystals) **and** a clearly stated structural relationship to SEQ ID NO: 15, namely either 95%, 90% or 98% identity to SEQ ID NO: 15, wherein there is no sequence variation in conserved domains. As stated on page 8, lines 12-19, of the specification as originally filed, Fig. 3 of the application clearly presents conserved domains that have been previously identified in antifreeze proteins. Claim 9 does not encompass polypeptides having sequence variations in these domains, as asserted by the Examiner, that would render the polypeptide unable to bind to ice crystals, as the claim clearly requires both that the polypeptides possess this functional activity and that there be no sequence variation in conserved domains.

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It is urged that the presently claimed polypeptides possess sufficient common identifying characteristics, namely specific percentages of sequence identity outside conserved domains and clearly recited functional characteristics, to clearly distinguish the claimed polypeptides from other materials and that these identifying characteristics would indeed lead one of skill in the art to conclude that the applicant was in possession of the claimed invention at the time the application was filed.

Applicants respectfully submit that claims 9, 26, 27, 29 and 34 fully satisfy the written description provision of 35 USC §112, first paragraph, and that this rejection of the pending claims may thus be properly withdrawn.

Claim Rejections under 35 U.S.C. §112, first paragraph - enablement

Claims 9, 26, 27, 29 and 34 stand finally rejected under 35 USC §112, first paragraph, as lacking an enabling disclosure. This rejection is respectfully traversed.

Amended claim 9 is drawn to polypeptides comprising a sequence having at least 90%, 95% or 98% identity to SEQ ID NO: 15, wherein the polypeptide possesses an ability to bind ice crystals and wherein there is no sequence variation in conserved domains. As discussed above, regions of SEQ ID NO: 15 showing homology to conserved domains previously shown to be present in anti-freeze proteins are shown in Fig. 3 of the instant specification. Accordingly, amended claim 9 clearly does not encompass variation in conserved domains that are considered essential for an ability to bind ice crystals, as asserted by the Examiner.

Applicants thus respectfully submit that claims 9, 26, 27, 29 and 34 fully satisfy the enablement requirements of 35 USC §112, first paragraph, and that this rejection of these claims may therefore be properly withdrawn.

Concluding Remarks

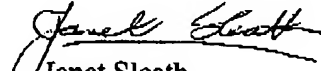
The final Office Action indicates that claims 6-8 are allowable. In a telephone call on December 22, 2005, the Examiner agreed that claims 26, 27, 29 and 34, which depend on allowed claims 6-8, are also allowable. Early reconsideration and allowance of all the pending claims is respectfully requested.

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Should the Examiner have any further concerns regarding the subject patent application, he is respectfully requested to telephone the undersigned at 206.382.1191.

Respectfully submitted,


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